STATUTORY DOUBLE PATENTING REJECTION UNDER 35 U.S.C. § 101

Claims 1-14 stand rejected under 35 U.S.C. § 101 as claiming the same invention as that of Claims 1-12 of copending application serial number 09/077,360. This rejection is respectfully traversed.

As noted in paragraph 1 of the Official Action, in order to substantiate a rejection under 35 U.S.C. §101 the conflicting claims must recite the same invention. The term "same invention" means an invention drawn to identical subject matter.

As clearly illustrated by the claim charts appearing below, claims of the present application are not identical to those of copending application serial number 09/077,360.

Claim 1 of 09/077,360 (024444-499)	**Claim 1 of 09/077,424 (024444-497)**
A cutting tool insert for milling low and medium alloyed steels with or without raw surfaces during wet or dry conditions comprising	A cutting tool insert particularly for turning of steel comprising
a cemented carbide body and a coating wherein said cemented carbide body comprises	a cemented carbide body and a coating wherein said cemented carbide body contains
WC,	WC,
8.6-9.5 wt-% Co and	6-15 wt-% Co and
0.2-1.8 wt-% cubic carbides of Ta, Ti and Nb,	0.2-1.8-wt % cubic carbides of Ti, Ta and/or Nb and
with Ti present on a level corresponding to a technical impurity, and	NOT RECITED
a highly W-alloyed binder phase with a CW-ratio of 0.78-0.93 and said coating comprises	a highly W-alloyed binder phase with a CW-ratio of 0.78-0.93 and said coating comprises
a first (innermost) layer of $TiC_xN_yO_z$ with $x+y+z=1$, with a thickness of 0.1-1.5 μm, and with equiaxed grains with size <0.5 μm	a first (innermost) layer of $TiC_xN_yO_z$ with a thickness of <1.5 μm, and with equiaxed grains with size <0.5 μm
a second layer of $TiC_xN_yO_z$ with $x+y+z=1$, with a thickness of 1-6 μm with columnar grains with diameter of <5 μm and	a second layer of $TiC_xN_yO_z$ with a thickness of 2-5 μm with columnar grains with an average diameter of <5 μm and
a layer of a smooth, fine-grained (0.5-2 μm) κ-Al_2O_3 with a thickness of 0.5-5 μm.	an outer layer of a smooth, fine-grained (0.5-2 μm) κ-Al_2O_3 with a thickness of 0.5-6 μm.

Claim 5 of 09/077,360 (024444-499)	**Claim 4 of 09/077,424 (024444-497)**
A method of making a milling insert comprising a cemented carbide body and a coating comprising	A method of making an insert for turning comprising a cemented carbide body and a coating wherein
comprising coating a WC-Co-based cemented carbide body with a highly W-alloyed binder phase with a CW-ratio of 0.78-0.93 is coated with	a WC-Co-based cemented carbide body with a highly W-alloyed binder phase with a CW-ratio of 0.78-0.93 is coated with
a first (innermost) layer of $TiC_xN_yO_z$ with $x+y+z=1$, with a thickness of 0.1-1.5 μm, with equiaxed grains with size <0.5 μm using known CVD-methods	a first (innermost) layer of $TiC_xN_yO_z$ with $x+y+z=1$, with a thickness of 0.1-1.5 μm, with equiaxed grains with size <0.5 μm using known CVD-methods
a second layer of $TiC_xN_yO_z$ with $x+y+z=1$, with a thickness of 1-6 μm with columnar grains with a diameter of about <5 μm deposited by MTCVD-technique, using acetonitrile as the carbon and nitrogen source for forming the layer in a preferred temperature range of 850-900°C and	a second layer of $TiC_xN_yO_z$ with $x+y+z=1$, with a thickness of 2-8 μm with columnar grains with a diameter of about <5 μm deposited by MTCVD-technique, using acetonitrile as the carbon and nitrogen source for forming the layer in a preferred temperature range of 850-900°C and
a layer of a smooth κ-Al_2O_3 with a thickness of 0.5-5 μm.	a layer of a smooth κ-Al_2O_3 with a thickness of 0.5-6 μm.

Therefore, as clearly illustrated by the above, the claims of the two copending applications are not identical. Therefore, the rejection should be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 1-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,652,045 to Nakamura et al (hereafter "*Nakamura et al*") or U.S. Patent No. 5,915,162 to Uchino (hereafter "*Uchino et al*") or U.S. Patent No. 5,920,760 to Yoshimura et al (hereafter "*Yoshimura et al*") or U.S. Patent No. 5,545,490 to Oshika (hereafter "*Oshika*") in view of U.S. Patent No. 5,549,980 to Ostlund et al (hereafter "*Ostlund et al*") or U.S. Patent No. 5,451,469 to Gustafson et al (hereafter "*Gustafson et al*") or U.S. Patent No. 4,610,931 to Nemeth et al (hereafter "*Nemeth et al*") on the

grounds set forth in paragraph 6 of the Official Action. For at least the reasons noted below, the rejection should be withdrawn.

The present invention is directed to a coated cutting tool and its method of production. According to the present invention, it has now surprisingly been found that by combining a particular substrate with a particular coating structure, a cutting tool is produced which has improved properties and resists many of the conventional wear types experienced by such material when incorporated into cutting tools. A cutting tool formed consistent with the principles of the present invention is embodied in Claim 1. Reference is made to the above table which lists those features recited in Claim 1. Similarly, a method practiced consistent with the present invention is embodied by Claim 4. References also made to the above table which lists those features included in Claim 4.

For at least the reasons noted below, none of the applied references, taken alone or in combination disclose or suggest each and every element recited by Claims 1 and Claim 4 of the present invention.

It is asserted in paragraph 6 of the Official Action that *Nakamura et al* or *Uchino et al* or *Yoshimura et al* or *Oshika* discloses the claimed multilayer coating. This assertion is respectfully traversed.

With regard to the coating, Claim 1 requires, *inter alia*:

> a first (innermost) layer of $TiC_xN_yO_z$ with a thickness of <1.5 μm, and with equiaxed grains with size <0.5 μm.

Similarly, Claim 4 requires, with regard to the coating:

> a first (innermost) layer of $TiC_xN_yO_z$ with $x + y + z = 1$, with a thickness of 0.1-1.5 μm, and with equiaxed grains with size <0.5 μm using known CVD-methods.

Nakamura et al fails to disclose or suggest at least the above-described first coating layer. *Nakamura et al* is directed to a coated tungsten carbide-based cemented carbide blade member. *Nakamura et al* discloses that the first coating layer is formed from one of TiN, TiC, and TiCN (see, e.g.-column 3, lines 16-17). *Nakamura et al* fails to disclose or suggest forming a first coating layer of any type of titanium oxycarbonitride, much less the particular titanium oxycarbonitride recited in Claims 1 and 4.

Uchino et al also fails to disclose or suggest at least the above described first coating layer of the presently claimed invention. *Uchino et al* is directed to a coated cutting tool and a process for the production thereof. In particular, *Uchino et al* discloses a coating structure in which the first coating layer is formed from either TiCN or a composite layer formed by a first layer of TiN and an additional layer of TiCN (see, e.g.-column 5, lines 5-10). Therefore, *Uchino et al* clearly fails to disclose or suggest forming a first coating layer of any type of titanium oxycarbonitride, much less the particular one recited in Claims 1 and 4.

Yoshimura et al also fails to disclose or suggest at least the first coating layer recited in Claims 1 and 4. In particular, *Yoshimura et al* is directed to a coated hard alloy blade member. The coating described by *Yoshimura et al* includes an inner layer of TiCN having unilaterally grown elongated crystals. By contrast, Claims 1 and 4 require a first innermost layer of a titanium oxycarbonitride with equiaxed grains of a particular size.

Therefore, *Yoshimura et al* fails to disclose or suggest at least this aspect of Claims 1 and 4 of the present invention.

Oshika also fails to disclose or suggest at least the first coating layer recited by Claims 1 and 4 of the present invention. *Oshika* is directed to a surface coated cutting tool. In the coating described in *Oshika*, an inner layer is disclosed which may include one or more layers of titanium carbide, titanium nitride, titanium carbonitride, titanium carboxide, and titanium oxycarbonitride. However, *Oshika* does not disclose anything with regard to the stoichiometric proportions of the constituent elements of an inner coating layer formed of titanium oxycarbonitride, the claimed thickness of an inner layer of titanium oxycarbonitride (< 1.5 μm), or whether the inner coating layer formed of titanium oxycarbonitride has equiaxed grains of a size < 0.5 μm. Therefore, *Oshika* clearly fails to disclose or suggest a particular first coating layer recited in Claims 1 and 4 of the present invention.

It is further asserted in paragraph 6 of the Official Action that *Ostlund et al* or *Gustafson et al* or *Nemeth et al* disclose the claimed substrate. This assertion is respectfully traversed. With regard to the substrate, Claim 1 recites a cemented carbide body including a 6-15 wt.% Co, 0.2-1.8 wt.% cubic carbides of Ta, Ti and Nb, and a highly-alloyed binder phase having a CW ratio of 0.78-0.93. Claim 4 recites, with regard to the substrate, a cemented carbide body with a highly tungsten alloy binder phase with a CW-ratio of 0.78-0.93.

Ostlund et al is directed to a cemented carbide with a binder phase enriched surface zone. *Ostlund et al* discloses that a total amount of cubic carbide phase expressed as the

content of metallic elements forming the cubic carbides (i.e.- Ti, Ta, Nb, etc.) is between 6 and 15 wt.% (see, e.g.- column 3, lines 52-55). Moreover, the cemented carbide materials described in *Ostlund et al* has approximately 6.5 wt.% Co. *Ostlund et al* is silent with regard to any CW ratio. Therefore, it is clear that *Ostlund et al* fails to disclose or suggest the cemented carbide body recited in Claims 1 and 4 of the present invention.

Gustafson et al is directed to a cemented carbide with a binder phase enriched surface zone. The material described in *Gustafson et al* includes between 2 and 10 wt.% of binder elements (e.g.- Co) (see, e.g.- column 3, lines 61-62). *Gustafson et al* describes cemented carbide material as including 4 to 15 wt.% of cubic carbide forming elements. Moreover, *Gustafson et al* fails to disclose any type of CW ratio. Therefore, it is clear that *Gustafson et al* also fails to disclose or suggest the recited cemented carbide body of Claims 1 and 4.

Nemeth et al is directed to a binder phase enriched cemented carbide body and method of its manufacture. The cemented carbide material described in *Nemeth et al* includes between 5 and 10 wt.% cobalt and 20% or less cubic carbide content (see, e.g.- column 5, line 16-19). Moreover, *Nemeth et al* fails to disclose any type of CW ratio information. Therefore, *Nemeth et al* also clearly fails to disclose or suggest the cemented carbide body recited in Claims 1 and 4.

Based on the above, reconsideration and withdrawal of the rejections is respectfully requested.

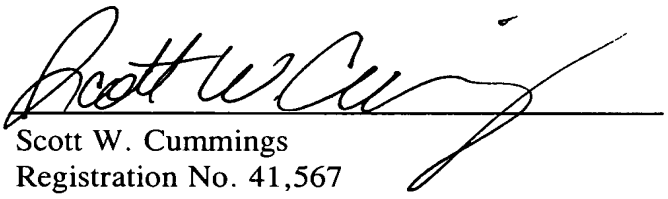
The remaining claims depend either directly or indirectly upon Claims 1 and 4. Therefore, these claims are also distinguishable over the applied prior art references for at least the same reasons noted above.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Scott W. Cummings
Registration No. 41,567

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

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